

FRUIT KEY TO NORTHEASTERN TREES

(A Reply to a Review by M. L. Fernald)

WM. M. HARLOW

The editor of "Rhodora" kindly reviewed the above publication in the March 1947 number of that periodical. It is the intention of this reply to discuss facts and not to descend to the plane of half-truths and innuendoes.

Perhaps it should be stated that the key was written for beginning students in biology, and not for taxonomists. This is apparent to anyone who reads it, and was so indicated in the preface.

Evidently the reviewer does not like fruit keys as such. For many years foresters, seedsmen, horticulturists, and others have struggled with keys which use, indiscriminately, leaf, flower, and fruit characters. Suppose someone sends you a fruit sample with no branches or leaves, to say nothing of flowers. Just how do you key it in such manuals as "Gray's New Manual of Botany," 7th Ed.? The author, therefore, offers no apology for having attempted to produce a workable key using only fruit characters.

Should a key slavishly follow some system of natural classification and thereby indicate the relationships of the plants included, or should it be a device for quickly and easily determining the identity of an unknown specimen? The reviewer seems to favor the first alternative, the author the second. However, when the reviewer says that *Liriodendron* is keyed out with *Abies*, he is stating only half of the truth, since anyone happening to run out *Liriodendron* at this point is referred to No. 37 in the key where this genus is included and *illustrated* in its "proper" place among the Angiosperms bearing samaras. The inclusion of *Liriodendron* with *Abies* is only for the neophyte who might pick up a green or newly ripe "cone" of the tuliptree and not sense that it is composed of samaras which soon become detached.

When it comes to the reviewer's suggested separation of *Tsuga* and *Picea*, the force of the saying "that only the dead are consistent" really becomes apparent: N. B. at this juncture the reviewer would have used an exclamation point (!). He states that *Tsuga* has "scattered" leaves, but that in *Picea* they are

“spirally arranged” (the temptation to use an exclamation point is almost irresistible). To check this separation of these genera, the author consulted three authorities; (1) “Gray’s New Manual of Botany,” 7th Ed., (2) “Manual of Cultivated Trees and Shrubs” by A. Rehder, and (3) Nature, but not necessarily in the order given. Almost unavoidably, some rather astonishing discrepancies between (1) and (2 and 3) were discovered. Gray’s Manual states that the leaves of not only *Tsuga* but also *Picea* and *Abies* are “scattered,” which may be presumed to mean that they have no arrangement but are borne helter-skelter on the twig. No. 2 agrees with No. 3 that they are all spirally arranged.

The generic key under Pinaceae in Gray’s Manual has an error in the leaf arrangement of *Larix* as follows:

*Leaves in bundles of two or more

1. PINUS. Leaves 2–5 in each bundle, evergreen.
2. LARIX. Leaves many in each cluster, deciduous.

Furthermore, under the generic description of *Larix* the statement is made, “leaves . . . very many in a fascicle, developed in early spring from lateral scaly and globular buds.” By contrast, Rehder’s statement is wholly descriptive of what one actually finds in nature viz: “leaves spirally arranged and remote on the long shoots, densely clustered on the lateral short spurs.” Since the leaves on new growth are single and spirally arranged, it may be presumed that this is also their arrangement on the spurs. The appearance of “whorls” or “clusters” is due to the extremely slow growth in length of these dwarfed branches. To refer to larch leaves as “fascicled” or in “bundles” as are those of the pines, promotes error and confusion.

About the only actual errors the reviewer could find (there were some he failed to see) were those of indiscriminate use of upper and lower case in common names. The author is glad to have these called to his attention and has already corrected them in the new printing of the key. Even here, however, the reviewer was careless in quoting “Chinese-sumac.” The hyphen was necessary because “Chinese-” came at the end of a line and “sumac” began the next line. “Chinesesumac” was indicated, not “Chinese-sumac.”

If they like, the authors of "Standardized Plant Names" may reply to the comments on "that presumptuous model." Its saving grace is that when a student sees the names osageorange, tanoak, and pineapple, he knows that the first is not an orange, the second is not an oak, and the third is not an apple. By the way, does the reviewer spell pineapple "pine" "apple" and if not, why not?

Evidently the author's primary error was in sending a copy of the key to "Rhodora" for review. It was his misconception that the magazine was actually "devoted primarily to the flora of the Gray's Manual Range and regions floristically related." In his opinion, a key based upon fruit characters fell within these limits.

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GENERIC STATUS OF TRIODANIS AND SPECULARIA

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In RHODORA for September, 1946, Professor M. L. Fernald discussed in detail the case of "*Triodanis* versus *Specularia*"¹, concluding that as a genus *Triodanis* "seems . . . very weak." He advocated the reunion of *Triodanis* with the European genus *Specularia*, in accordance with the policy established by Alphonse DeCandolle in 1830 and subsequently followed by practically all European workers and most Americans. Professor Fernald's conclusions were reached after examination of my earlier paper on *Triodanis*², and his objections to the maintenance of the group as an independent genus were based chiefly upon what he called the "reputed generic differences" which he understood to be summarized in two paragraphs of this earlier paper. He felt that these "differences" did not include constant strong morphological characters, and he considered that some of them had been over-stressed or were, indeed, meaningless as set forth. He showed to his own satisfaction that *Triodanis* was not to be considered "a clearly distinct genus" (that is, distinct from *Specu-*

¹ RHODORA 48: 209-214, 215, 216. pl. 1049, 1050.

² Wrightia 1: 13-52. 1945.